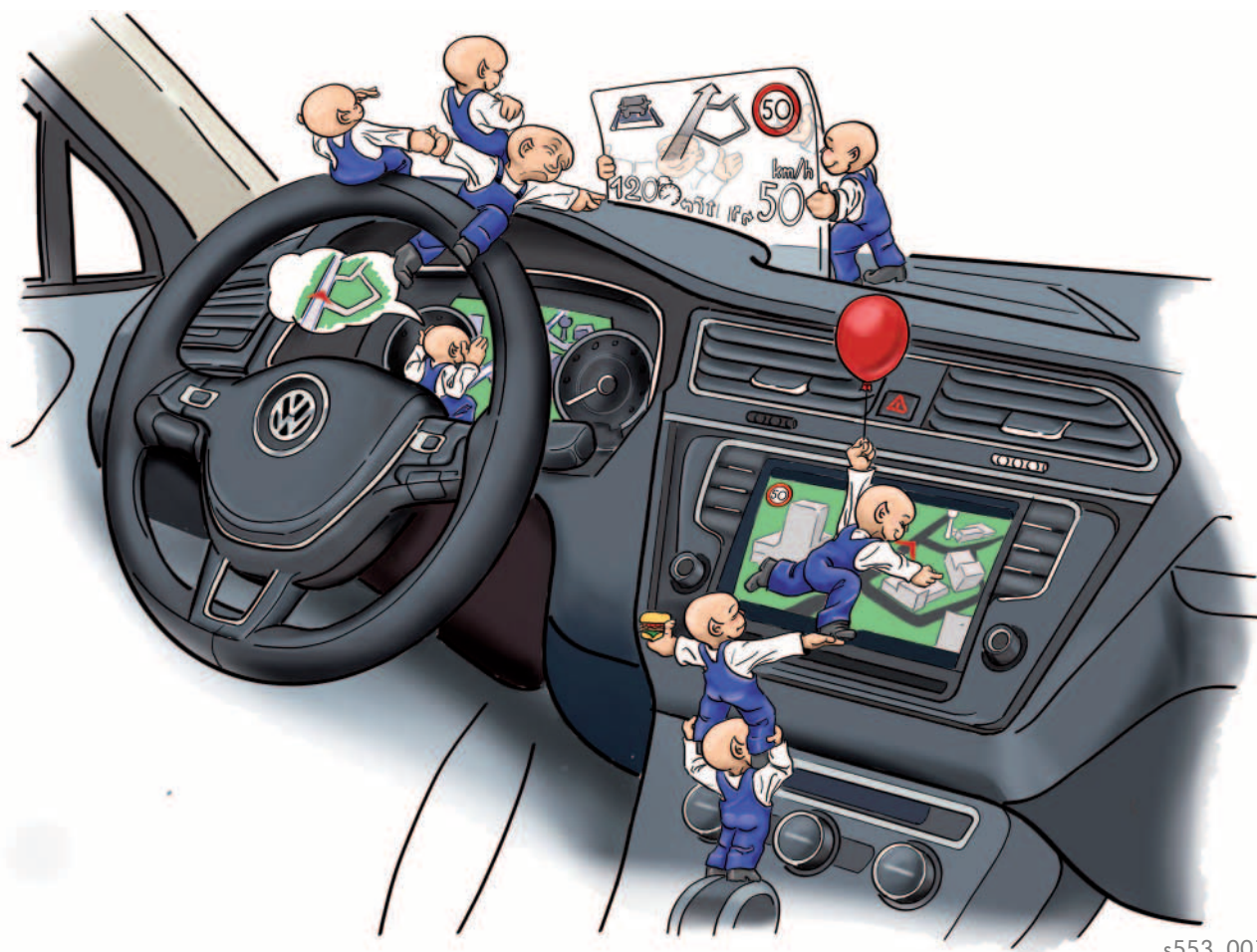




Self-Study Programme 553

The Tiguan 2017
Electrical System and Infotainment
Design and function





s553_001

The second generation of the Tiguan has been improved again in terms of driving dynamics, convenience and driving experience. This means that more functions, e.g. more assistance systems, are available to the driver. The electrical system and the infotainment system, being the interface between the vehicle and humans, need to keep pace in this area in order to support the sensor system for the driving situations and control of the multiple functions. This begins, for example, with the LED light technology that ranges from the Dynamic Light Assist system to the Active Info Display and the Head-up Display.

This means you do not only get information supplied in an appealing way, but also increased driving safety. Various telephone and media interfaces are offered for the occupants so that the stay in the Tiguan is even more entertaining and individual. They allow off-board access to a wide range of services in the form of Car-Net.

You will find explanations of the systems both in this Self-study Programme and in the chapter on the electrical system in Self-study Programme 552 "The Tiguan 2017".

The Self-study Programme shows the design and function of new developments.
The contents will not be updated.

For current testing, adjustment and repair instructions, refer to the relevant service literature.



**Important
note**

Contents

Introduction	4
Overview of electrical system	6
Network system	10
Lights	19
Infotainment	34
Car-Net	40
Glossary.....	46

Introduction

Overview of electrical system and infotainment systems

These systems may vary according to country and equipment level. For further information:

- **Active Info Display dash panel insert**
in Self-study Programme 545
“The Passat 2015 – Electrical System”
- **“Mid” LED headlights with Dynamic Light Assist**
in this Self-study Programme
- **Keyless access locking and starting system**
in Self-study Programme 545
“The Passat 2015 – Electrical System”
- **Head-up Display**
in Self-study Programme 550
“The Passat GTE”
- **Fifth generation immobiliser and component protection**
in this Self-study Programme
- **Easy Open**
in Self-study Programme 545
“The Passat 2015 – Electrical System”
- **Start/stop system 2.0**
in Self-study Programme 545
“The Passat 2015 – Electrical System”





s553_011

- **MIB Generation 2**
in Self-study Programme 546
“The Passat 2015 – Infotainment and Car-Net”
- **App Connect**
in this Self-study Programme
- **Guide & Inform**
in this Self-study Programme
- **Security & Service**
in this Self-study Programme
- **Exit concept**
in Self-study Programme 545
“The Passat 2015 – Electrical System”
- **“DYNAUDIO Excite Surround” sound system**
in Self-study Programmes 519
“The Infotainment System in the Golf 2013 – Part II” and 536 “The Golf SV”
- **Reversing camera with washer jet**
in Self-study Programme 548 “The Touran 2016”
- **Personalisation**
in Self-study Programme 548 “The Touran 2016”

Overview of electrical system

Locations in electrical system

An alternator with a charging current of 110A, 140A or 180A is used according to the equipment. The following battery types with capacities between 44 and 72 Ah are fitted also according to the equipment:

- Lead-acid battery
- EFB (enhanced flooded battery)
- AGM (absorbent glass matt)

Depending on the power unit, the 12-V battery is installed in the engine compartment or in the luggage compartment.

“Front battery” supply system

The power is distributed in the vehicle via three fuse holders or relay and fuse carriers:

- Multi-fuse pre-fuse holder SA on the relay and fuse carrier SR1 in the E-box in the engine compartment
- Fuse holder SB on the relay and fuse carrier SR1 in the E-box
- Fuse holder SC on the relay and fuse carrier SR2 on the left under the dash panel, behind the storage compartment

Alternator



E-box



Multi-fuse pre-fuse holder SA on relay and fuse carrier SR1

Fuse holder SB on relay and fuse carrier SR1





Please refer to the relevant current flow diagram in the corresponding customer service literature for the precise location of various fuses and relays.



s553_010



12-V battery in engine compartment



Fuse holder SC on relay and fuse carrier SR2

Overview of electrical system

“Rear battery” supply system

In vehicles with 2.0l 176kW TDi-Biturbo engine, the 12V battery is installed, due to limited space, in the luggage compartment.

The battery is installed in the central part of the luggage compartment close to the lock carrier. The power is distributed in the vehicle via four fuse holders or relay and fuse carriers:

- Multi-fuse pre-fuse holder SA on the relay and fuse carrier SR1 in the E-box in the engine compartment
- Fuse holder SB on the relay and fuse carrier SR1 in the E-box
- Fuse holder SC on the relay and fuse carrier SR2 on the left under the dash panel, behind the storage compartment
- Fuse holder SD in the main fuse box

The battery isolation igniter N253 is located in the main fuse box. The electrical supply to the high-current consumers in the engine compartment is irreversibly disconnected by the battery isolation igniter N253 when an airbag is deployed. Only the ABS control unit J104, the power steering control unit J500 and the consumers in the passenger compartment (fuse carrier SC) continue to be supplied with current. This means that the vehicle can still be steered, the brake functions remain intact and occupants can get out of the vehicle.

Alternator



E-box



Multi-fuse pre-fuse holder SA on the relay and fuse carrier SR1

Fuse holder SB on the relay and fuse carrier SR1



Jump starting point



12-V battery with main fuse box central in the luggage compartment close to the lock carrier



Positive battery terminal clamp

Fuse holder (SD1+SD2)

Battery isolation igniter N253

Main fuse box



s553_014



Fuse holder SC on relay and fuse carrier SR2

Network system

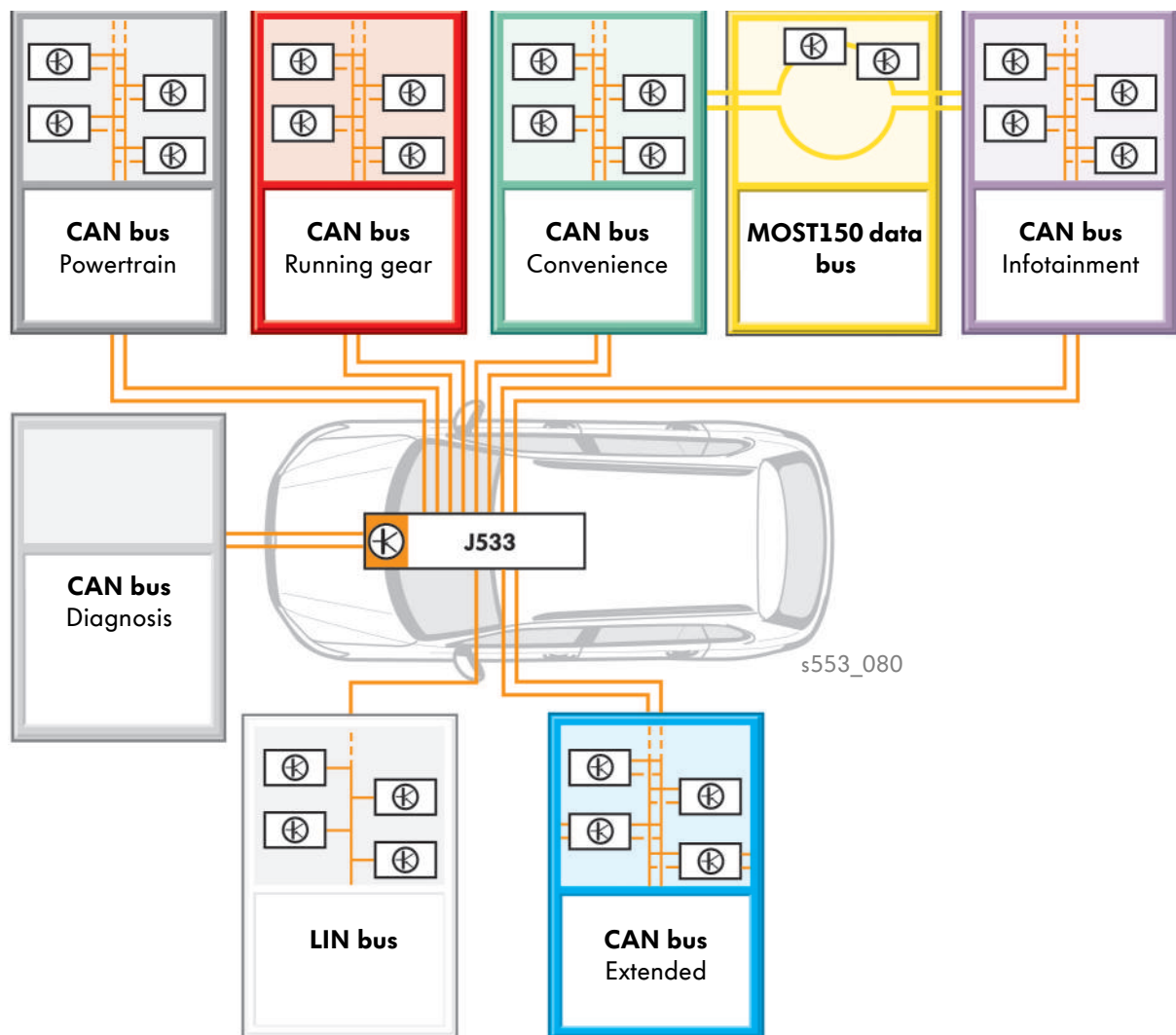
Overview of data bus systems used

The network has been expanded in comparison with the previous model.

All CAN bus systems have a transmission speed of 500 kbit/s.

The LIN bus rate is 19.2kbit/s. The MOST150 data bus, which uses fibre-optic technology and has a transfer speed of 150Mbit/s, is new. The data bus diagnostic interface J533 contains the control system for several LIN buses and forms the link between the individual CAN buses as usual.

Further LIN buses are connected to various control units.



Key

J533 Data bus diagnostic interface



CAN bus wire



LIN bus wire

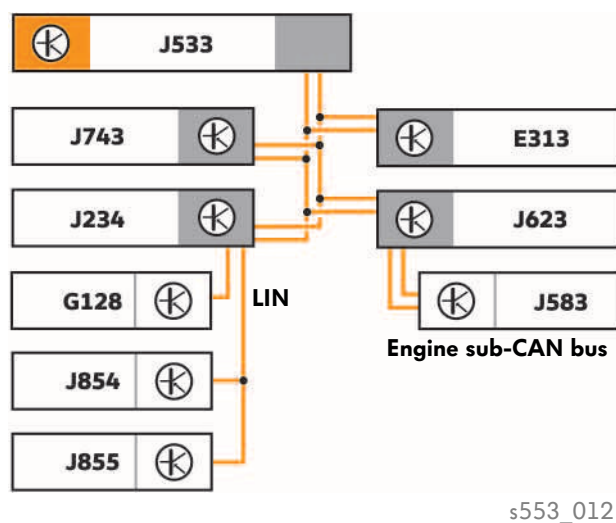


MOST fibre optic cable

CAN buses

Powertrain CAN bus

An additional three LIN buses are connected to the engine control unit J623 and airbag control unit J234 as sub-networks.

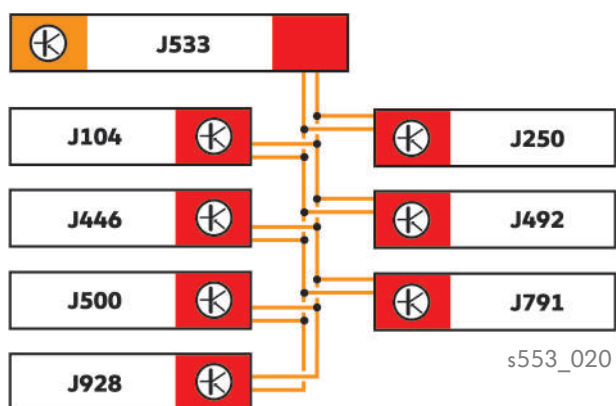


Key

E313	Selector lever
G128	Seat occupied sensor, front passenger side
J234	Airbag control unit
J533	Data bus diagnostic interface
J583	Control unit for NO _x sender
J623	Engine control unit
J743	Mechatronic unit for dual clutch gearbox
J854	Control unit for front right belt tensioner
J855	Control unit for front left belt tensioner

Running gear CAN bus

The control unit for overhead view camera J928 is connected to the running gear CAN bus.



Key

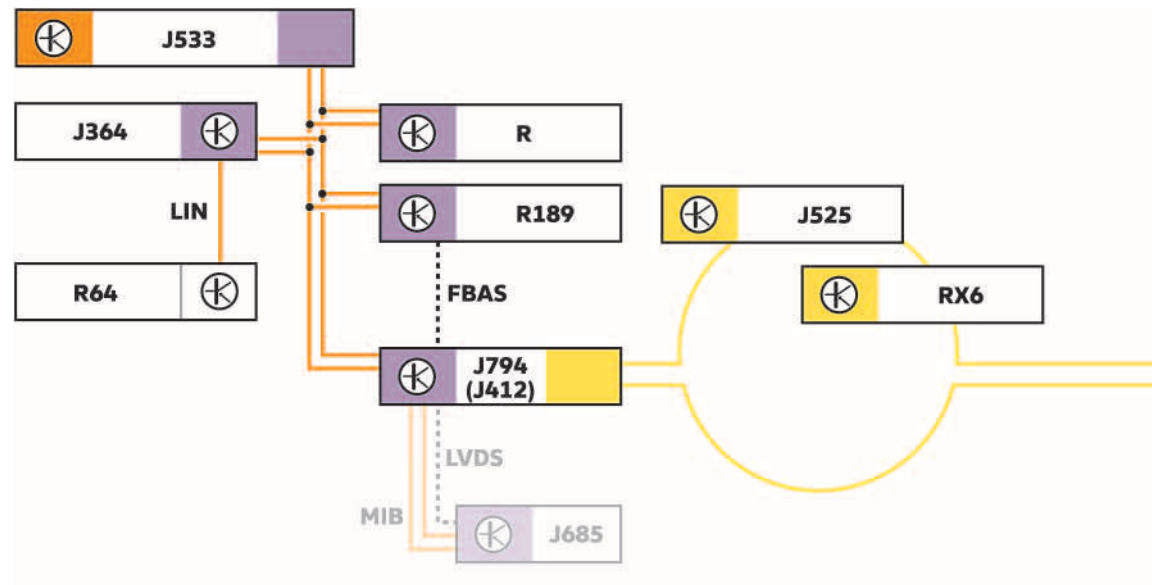
J104	ABS control unit
J250	Electronically controlled damping control unit
J446	Parking aid control unit
J492	All-wheel drive control unit
J500	Power steering control unit
J533	Data bus diagnostic interface
J791	Park assist steering control unit
J928	Control unit for overhead view camera

Network system

Infotainment CAN bus

The MIB CAN bus sub-network and the LVDS bus are connected to the infotainment CAN bus.

The video signal from the reversing camera is transferred via the FBAS bus to the control unit 1 for information electronics J794.



MOST150 data bus

The MOST connection is used for rapid transfer of multimedia data, in particular image, video and audio files, via a fibre optic cable. Transferring data with the aid of fibre optic cables enables a data transfer rate of 150 Mbit/s.

The data exchange between the following participating components occurs on the optical MOST bus:

- Control unit in the dash panel insert J285 (only with the Active Info Display dash panel insert)
- Digital sound package control unit J525
- Digital TV tuner RX6
- Control unit 1 for information electronics J794

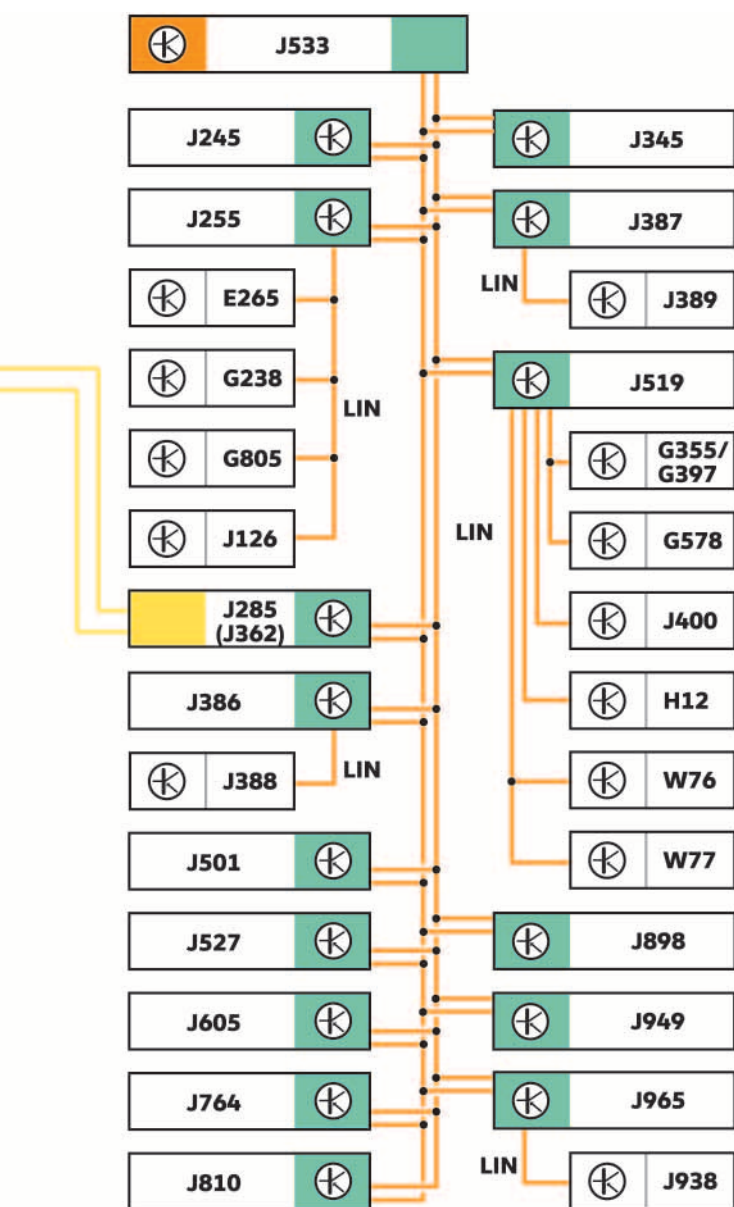
The control unit 1 for information electronics J794 is the function and diagnosis master for the MOST bus ring.

Key

J364	Auxiliary heater control unit
J412	Mobile telephone operating electronics control unit
J525	Digital sound package control unit
J533	Data bus diagnostic interface
J794	Control unit 1 for information electronics
R	Radio (connected to J794)
R64	Remote control receiver for auxiliary heating
RX6	TV tuner
R189	Reversing camera
MIB	Modular infotainment matrix CAN bus
CVBS	Colour video blanking signal

Convenience CAN bus

Since the number of control units, sensors and actuators has increased, particularly on the convenience CAN bus, numerous systems have been combined into separate LIN buses. These include, for example, the ambient lighting and the rear lid power opening control unit J938.



s553_022

Key

E265	Operating and display unit for rear air conditioning system
G238	Air quality sensor
G355	Humidity sender
G397	Rain and light sensor
G578	Anti-theft alarm sensor
G805	Pressure sender for refrigerant circuit
H12	Alarm horn
J126	Fresh air blower control unit
J245	Sliding sunroof adjustment control unit
J255	Climatronic control unit
J285	Control unit in dash panel insert
J345	Trailer detector control unit
J362	Immobiliser control unit
J386	Driver door control unit
J387	Front passenger door control unit
J388	Rear left door control unit
J389	Rear right door control unit
J400	Wiper motor control unit
J501	Multifunction unit control unit
J519	Onboard supply control unit
J527	Steering column electronics control unit
J533	Data bus diagnostic interface
J605	Rear lid control unit
J764	Control unit for electronic steering column lock
J810	Driver seat adjustment control unit
J898	Control unit for Head-up Display
J938	Rear lid power opening control unit
J949	Emergency call module control unit and communication unit
J965	Interface for entry and start system
W76	Roof ambient lighting bulb, left
W77	Roof ambient lighting bulb, right

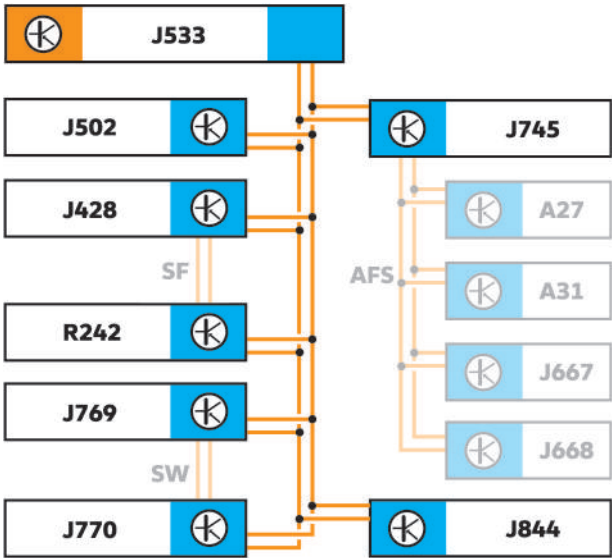
Network system

CAN bus extended

The majority of the control units that are assigned to the driver assist systems are combined on the CAN bus extended.

Key

- J428 Adaptive cruise control unit
- J502 Tyre Pressure Monitoring System control unit
- J533 Data bus diagnostic interface
- J745 Control unit for cornering light and headlight range control
- J769 Lane change assist control unit
- J770 Lane change assist control unit 2
- J844 Main beam assist control unit (not compatible with R242)
- R242 Front camera for driver assist systems

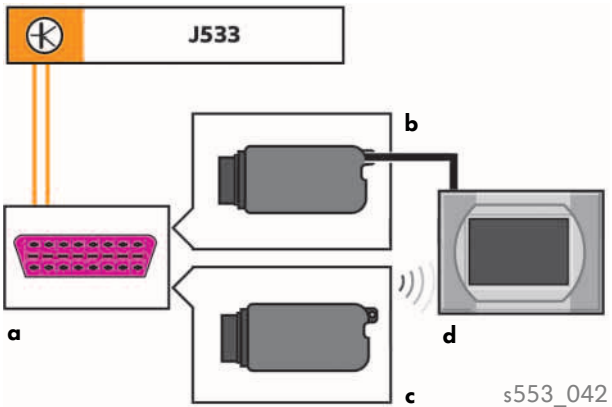


s553_038

Diagnostic CAN bus

The diagnostic CAN bus ensures communication between the vehicle diagnostic tester and the electronic vehicle systems via the data bus diagnostic interface J533.

Depending on the vehicle diagnostic tester, the data bus diagnostic interface can be connected wirelessly as usual. This is possible via Bluetooth or in the future via WLAN. The diagnostic radio head can also be connected directly to the tester via a USB cable. The USB cable is absolutely necessary for control unit flashing, for example.



s553_042

Key

- J533 Data bus diagnostic interface
- a Vehicle diagnostic connection
- b Diagnostic cable
- c Connection adapter for wireless connection
- d Suitable diagnostic unit

CAN bus sub-networks

The sub-networks reduce data traffic on the higher-level data bus and enable fast data transmission, involving only the relevant control units.

The following are new data bus sub-networks in the Tiguan: sensor fusion (SF), lane change (SW), MIB and two LIN buses on the data bus diagnostic interface J533.

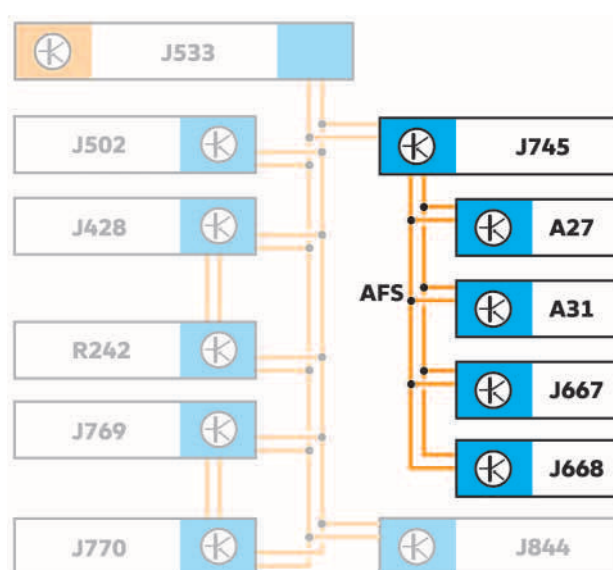
Cornering light CAN bus (AFS)

The cornering light CAN bus (AFS) is subordinate to the CAN data bus extended and is only used when the “Mid” LED headlights are installed.

The cornering light CAN bus combines the control unit for cornering light and headlight range control J745 with the output modules J667/J668 and A27/A31.

Data is transferred via this connection in conjunction with:

- The activation of the LED modules for dipped and main beams, additional main beam (A27/A31)
- The activation of the static cornering light (A27/A31)
- The activation of the turn signal, daytime running lights and side light (J667/J668)
- The regulation of the control motors for the headlight range control and dynamic cornering light (J667/668)



s553_040

Key

A27	Output module 1 for right LED headlight
A31	Output module 1 for left LED headlight
J667	Output module for left headlight
J668	Output module for right headlight
J745	Control unit for cornering light and headlight range control

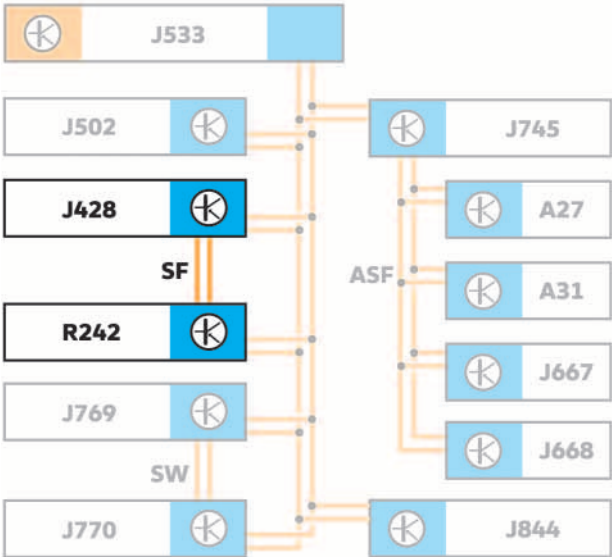
Network system

Sensor fusion CAN bus (SF)

The sensor fusion CAN bus is a sub-network of the CAN bus extended. The front camera for driver assist systems R242 communicates directly with the adaptive cruise control unit J428 via the CAN bus to ensure faster data transmission. J428 and the camera R242 are also connected directly to the CAN bus extended.

Key

- J428 Adaptive cruise control unit
- R242 Front camera for driver assist systems



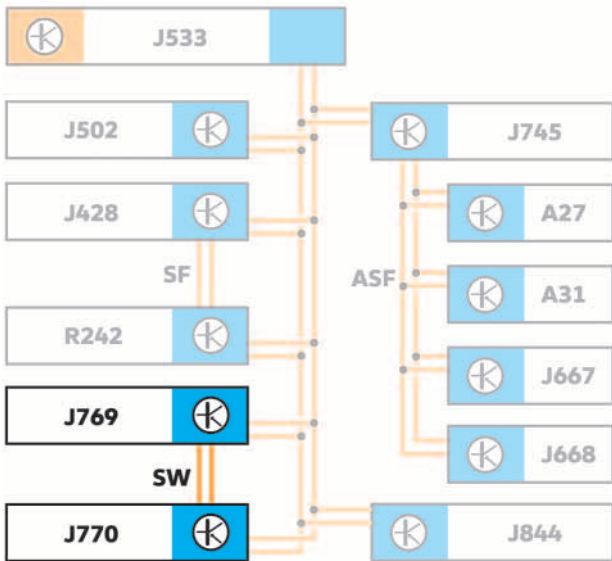
s553_044

Lane change CAN bus (SW)

The lane change CAN bus is a sub-network of the CAN bus extended. The lane change assist control unit J769 uses the lane change CAN bus to communicate directly with lane change assist control unit 2 J770 to ensure faster data transmission. In addition, both control units are also connected directly to the CAN bus extended.

Key

- J769 Lane change assist control unit
- J770 Lane change assist control unit 2



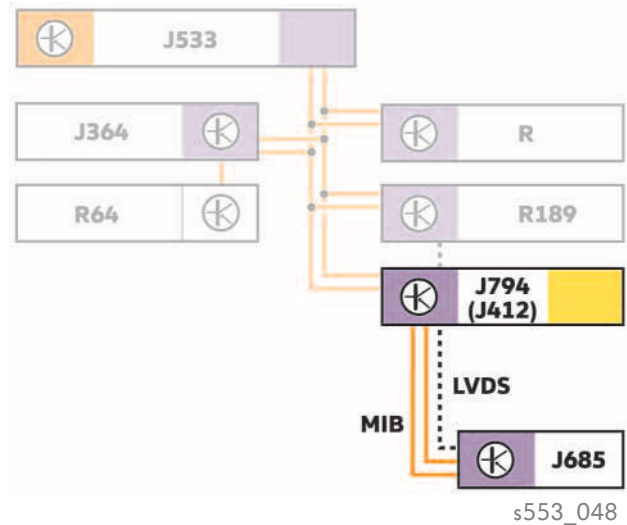
s553_046

MIB CAN bus

The MIB CAN bus (modular infotainment matrix) is a sub-network of the infotainment CAN bus.

The control signals and operating commands are exchanged between the control unit 1 for information electronics J794 and the display unit for front information display and operating unit control unit J685 using the MIB CAN bus.

Image, audio and information data are exchanged between these two control units via the LVDS bus.



Key

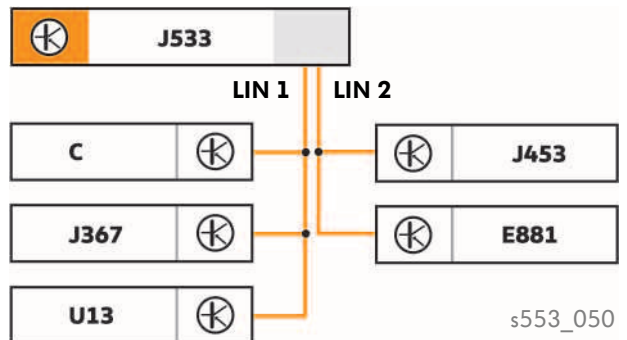
- J412 Mobile telephone operating electronics control unit
J685 Display unit for front information display and operating unit control unit

- J794 Control unit 1 for information electronics
LVDS Low-voltage differential signalling

LIN bus on data bus diagnostic interface J533

Two separate LIN buses are connected to the data bus diagnostic interface.

The diagnostic interface is the master for the two LIN buses.



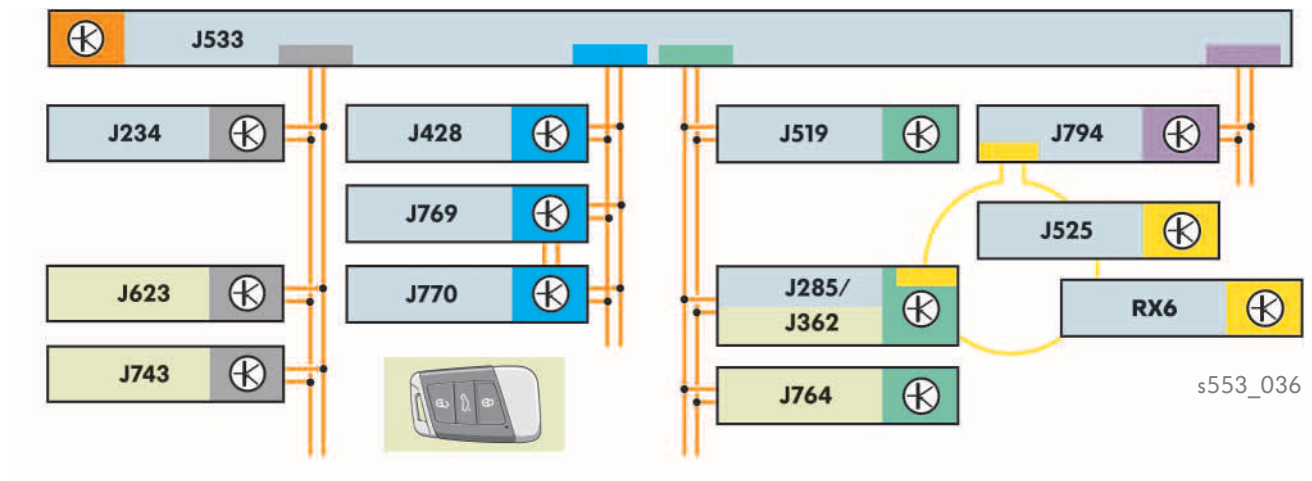
Key

- C Alternator
J367 Battery monitor control unit
J453 Multifunction steering wheel control unit
J533 Data bus diagnostic interface
U13 DC/AC converter with socket, 12 V - 230 V
E881 Operating unit for driving mode selection

Network system

Immobiliser and component protection

The Tiguan 2017 is equipped with the fifth generation immobiliser and component protection.



Key

J234	Airbag control unit	J794	Control unit 1 for information electronics
J285	Control unit in dash panel insert	RX6	TV tuner
J362	Immobiliser control unit		Immobiliser subscriber
J428	Adaptive cruise control unit		Component protection subscriber
J519	Onboard supply control unit		Powertrain CAN bus
J525	Digital sound package control unit		CAN bus extended
J533	Data bus diagnostic interface		Convenience CAN bus
J623	Engine control unit		Infotainment CAN bus
J743	Mechatronic unit for dual clutch gearbox		MOST bus
J764	Control unit for electronic steering column lock		CAN bus wire
J769	Lane change assist control unit		MOST fibre optic cable
J770	Lane change assist control unit 2		

When terminal 15 is switched on, all corresponding control units are checked for component protection. If the result of the check is negative, the respective control unit will block its function partly or completely (e.g. the radio can be switched on, but the amplifier stage is blocked).

The component protection function then needs to be initiated online using the vehicle diagnostic tester.

This online connection is made to the FAZIT database. This is both responsible for enabling the component protection and also for all adaptations of the immobiliser components.

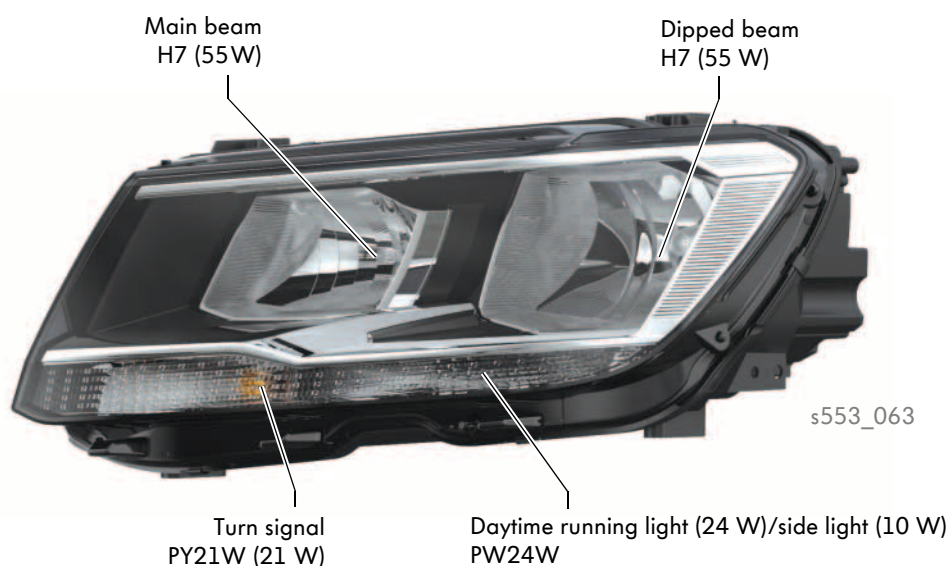
Headlights

Three different versions of the headlights based on the MQB are available:

- Halogen headlight
- “Basic” LED headlights
- “Mid” LED headlights with Dynamic Light Assist (DLA)

Use of the function varies according to market.

Halogen headlight



The halogen headlights are equipped with manual headlight range control, which can be adjusted using a potentiometer on the rotary light switch.

The halogen headlights also have a warm lamp monitoring function.

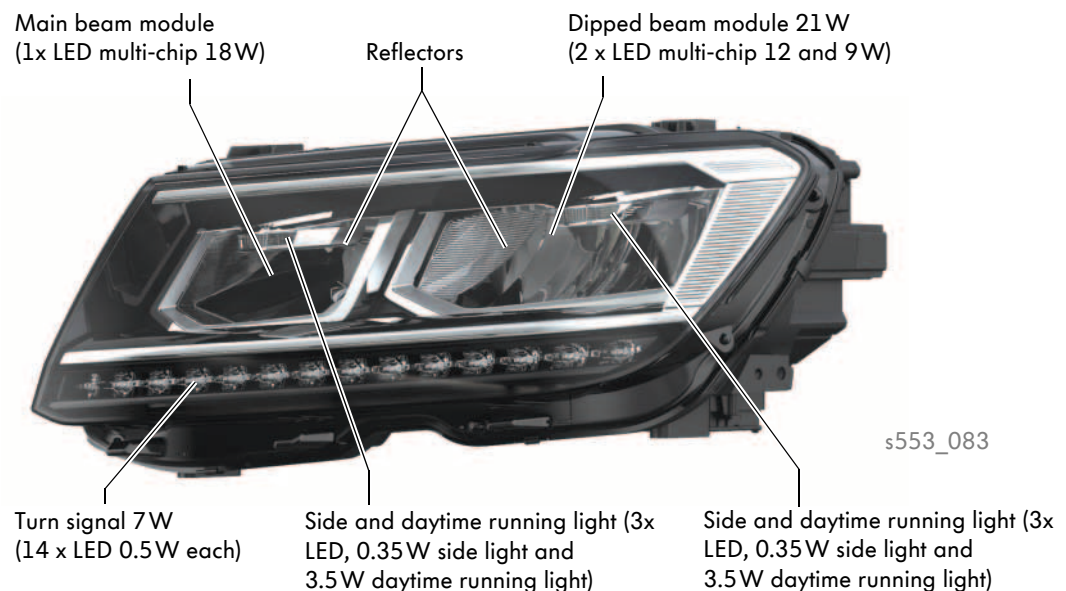
Lights

“Basic” LED headlights

The “Basic” LED headlights feature reflector technology. The LEDs emit their light against a reflector, which distributes it over the road.

The daytime running light and the side light functions are carried out by two LEDs in the upper part of the reflectors.

The LED light is dimmed for the side light function. The “Basic” headlights feature dynamic headlight range control.



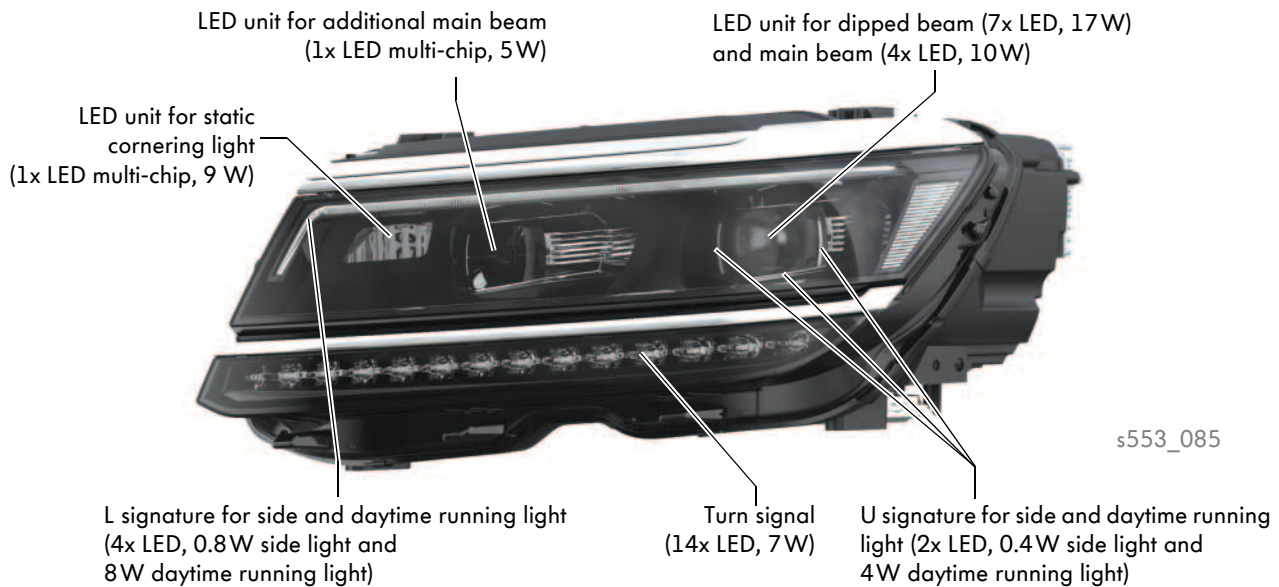
You will find further information on the “Basic” LED headlights in Self-study Programme no. 545 “The Passat 2015 – Electrical System”.

“Mid” LED headlights

The “Mid” LED headlights also have the following functions:

- Dynamic cornering light (AFS)
- Dynamic Light Assist

Use of the function varies according to market.



The LED unit for the dipped beam and the main beam uses the LED lens technology. The LEDs project their light through a lens.

The “Mid” headlights also have an LED unit for an additional main beam using reflector technology.

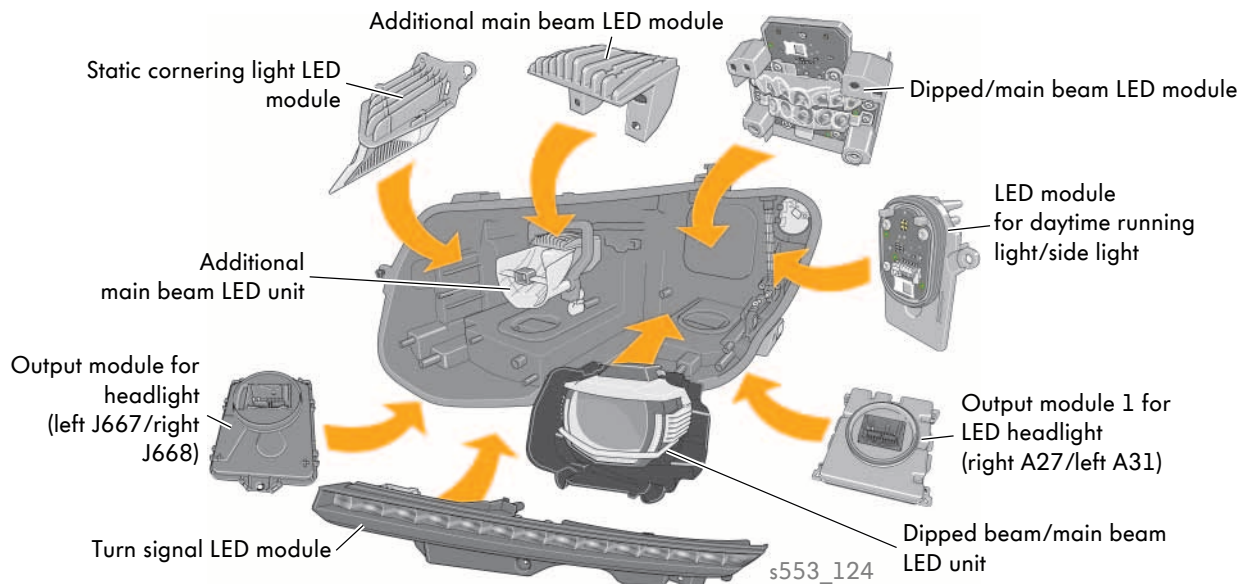
The LED unit for additional main beam supports the LED unit for dipped beam and main beam during main beam usage.

The “Mid” headlights also feature dynamic headlight range control.

Lights

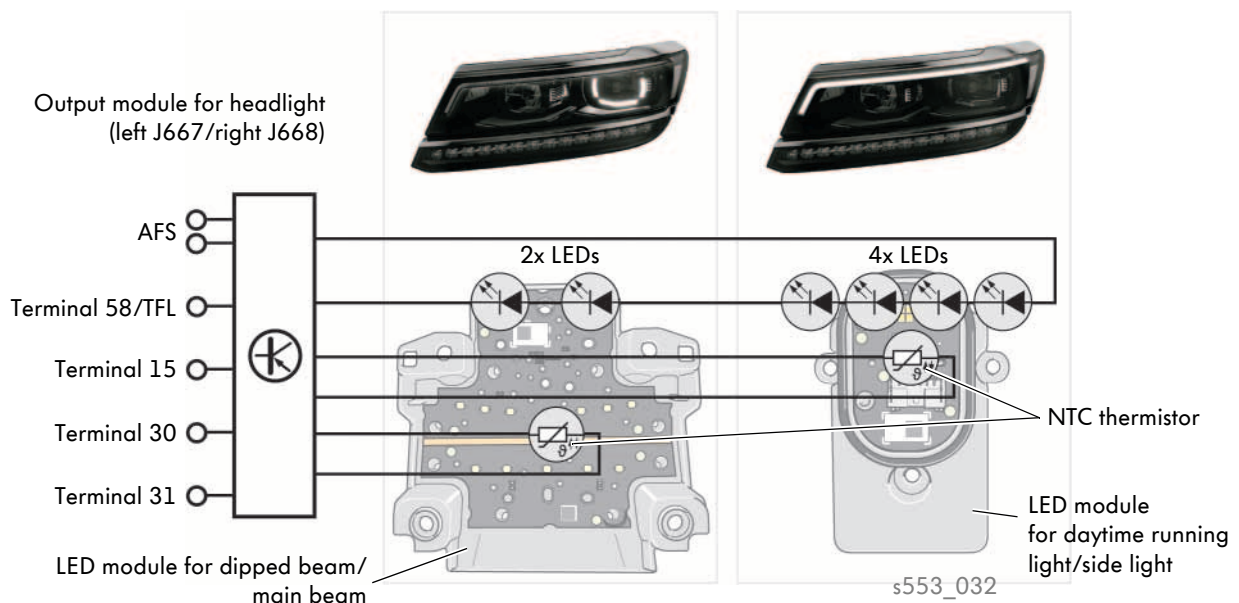
Design

The following LED modules and module carriers are installed in the LED headlight housing:



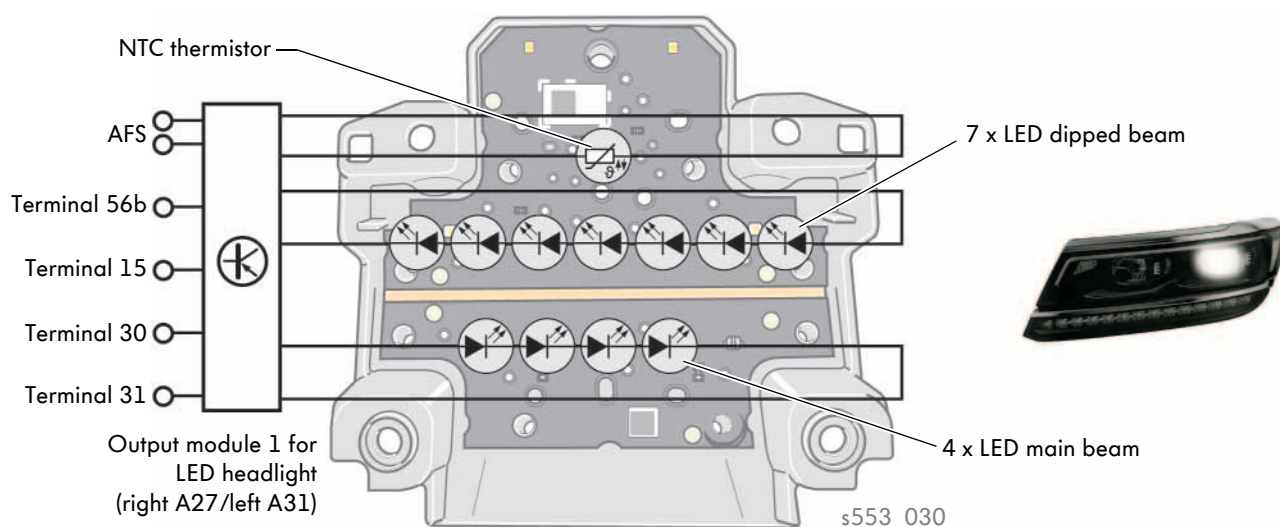
Daytime running lights (TFL) and side lights (terminal 58)

The six LEDs used for the daytime running and side lights are connected in series. Two LEDs on the dipped beam/main beam LED module create the U shape around the dipped/main beam with a light strip. Four LEDs in the daytime running light/side light LED module create the L shape on the upper edge of the headlight with another light strip. An NTC thermistor is installed in each of the LED units and can send the temperature to the output module. If the LEDs overheat, the output module reduces the current strength.



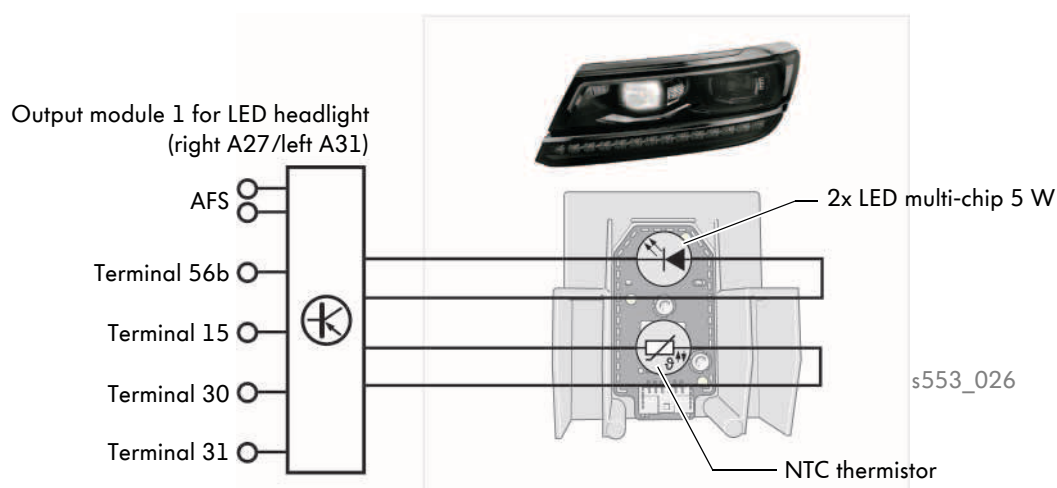
Dipped beam (terminal 56b) and main beam

Seven LEDs are installed in the upper part of the LED module for dipped beam and main beam. There are four LEDs for the main beam in the lower part. All LEDs for a beam function are connected in series. The temperature in the module is monitored at all times by an NTC thermistor. If the LEDs overheat, the control unit reduces the current strength.



Additional main beam

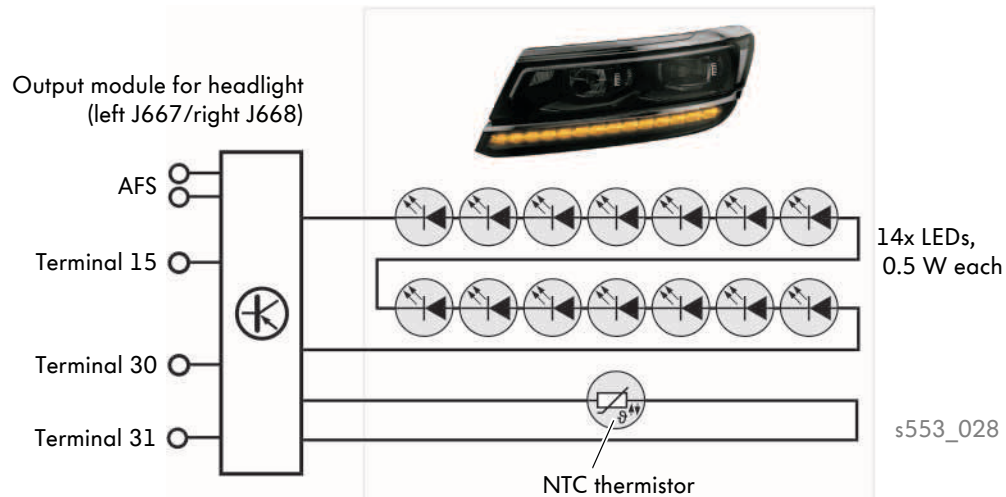
The additional main beam LED module has a double LED multi-chip (5 W) that is supplied by the A27/A31 output module. The temperature of the LEDs is also monitored by an NTC thermistor in this case.



Lights

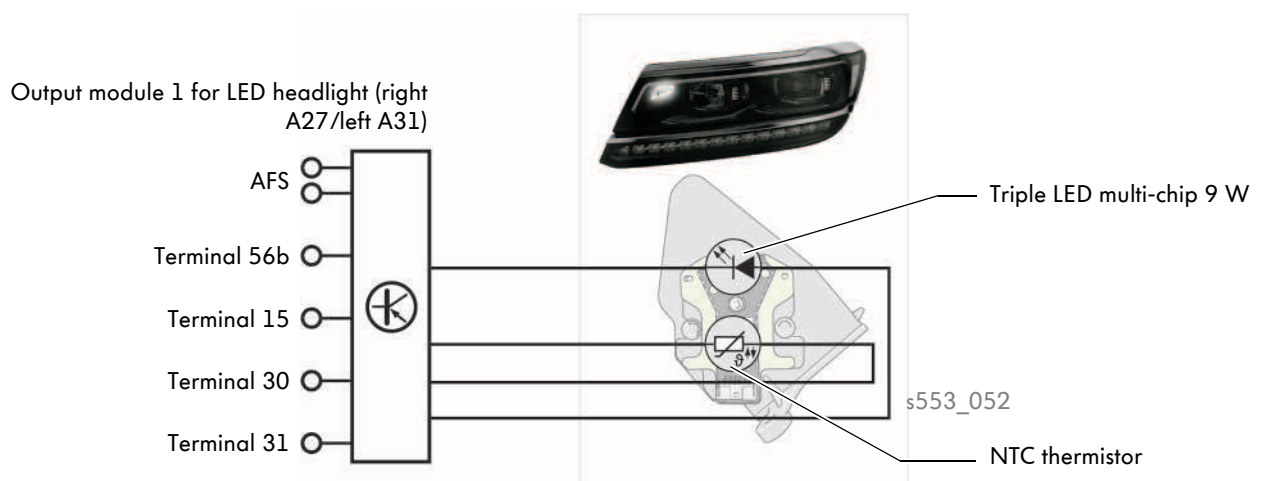
Turn signal

The turn signal LED module consists of 14 LEDs that are connected in series. The temperature of the LEDs is monitored by an NTC thermistor. The current strength is reduced if the LEDs overheat.



Static cornering light

The static cornering light is formed by a triple multi-chip. Its temperature is monitored by an NTC thermistor and the current strength is reduced if it overheats.

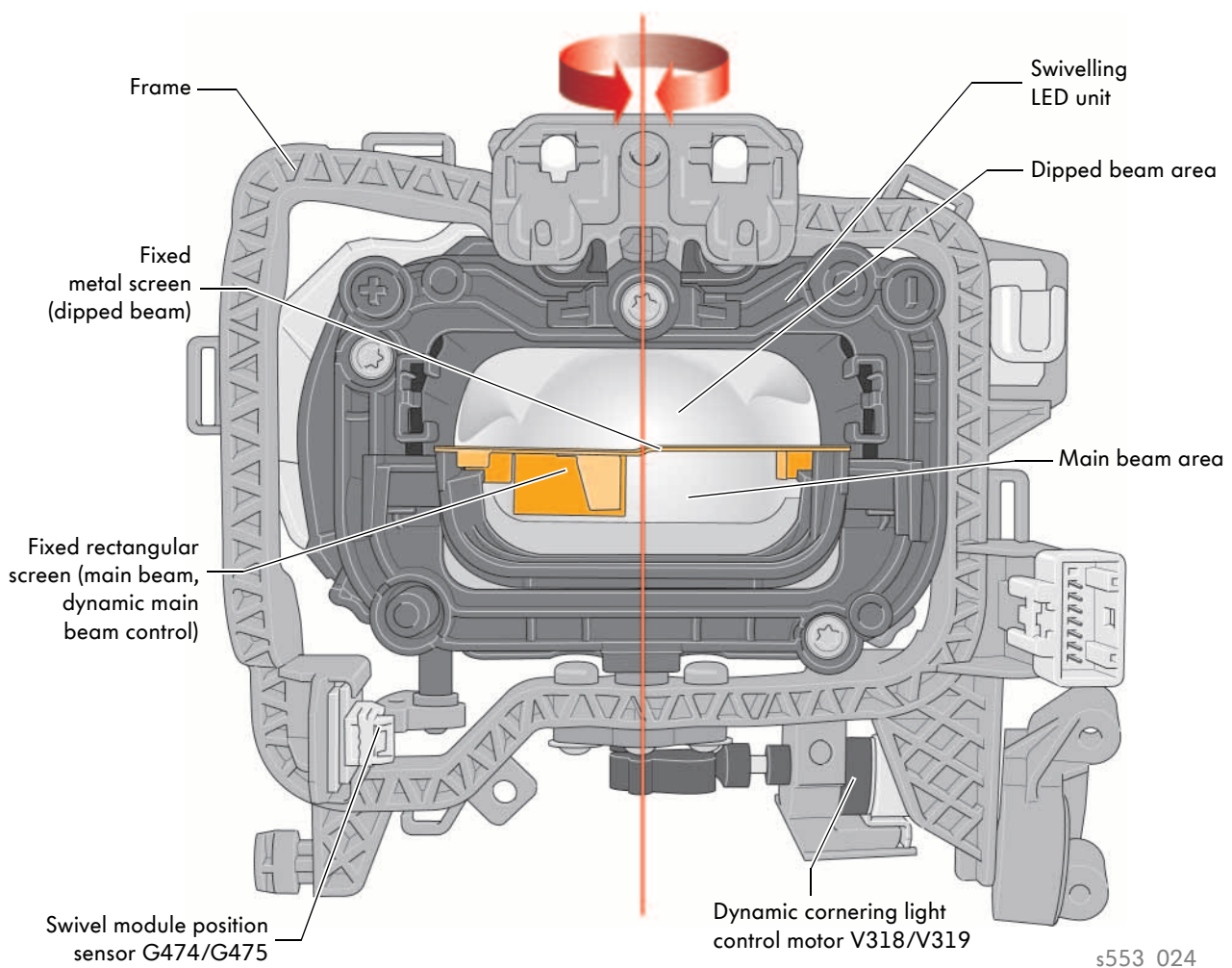


Dynamic Light Assist

The Dynamic Light Assist ensures that the road and its edges are fully illuminated without dazzling the drivers of vehicles travelling in front or of oncoming vehicles. The system uses the front camera for driver assist systems R242 to detect other road users as well as their distance from the vehicle and specifically masks part of the light beam.

Design

The light beam that is emitted from the swivelling LED unit is divided into two halves by a metal screen. The upper area is the aperture for the light for the dipped beam, the lower area is for the main beam. The lower area also features an additional fixed screen with a rectangular shape for the dynamic main beam control. The dynamic main beam control is a sub-function of the Dynamic Light Assist.



Lights

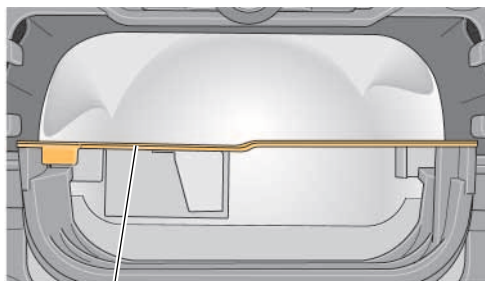
Light pattern

The light pattern is influenced by the fixed screens in the following way:

Dipped beam

The fixed metal screen separates the upper area for the dipped beam from the lower area for the main beam. The top contour of the screen also creates the inflection angle of the dipped beam. The seven LEDs in the upper part of the LED module are activated so that the light beam is only emitted above the fixed metal screen. The lens reflects the light pattern around the horizontal axis of the screen.

Screen for dipped beam



Fixed metal screen

s553_054

Light pattern

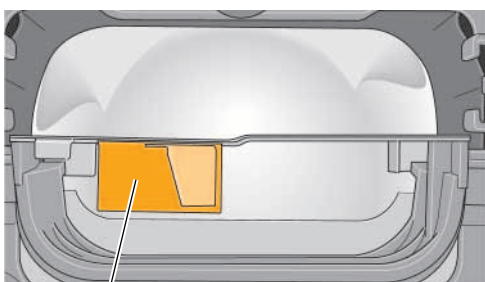


s553_068

Main beam

The four LEDs in the lower part of the LED module are also activated so that the light beam is emitted above and below the fixed metal screen. The fixed rectangular screen is used for the dynamic main beam control function. The light pattern thus shows a non-illuminated rectangular area that is illuminated by the additional main beam in main beam operation. The lens reflects the light patterns around the horizontal axis of the screen.

Main beam screen



Fixed rectangular screen

s553_056

Light pattern

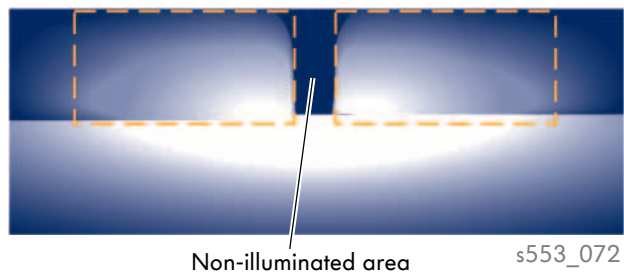


s553_070

Main beam without additional main beam

Both headlights produce a light pattern without additional main beam in the middle of which there is a non-illuminated area. This non-illuminated area is used to prevent the traffic in front and oncoming traffic being dazzled (dynamic main beam control).

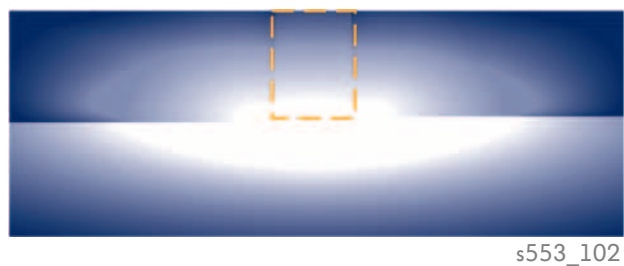
Light pattern



Main beam with additional main beam

If neither an oncoming vehicle, a vehicle in front nor an illuminated object is detected, the additional main beam illuminates the non-illuminated area.

Light pattern



Lights

Function

The following examples show the light distribution of the headlights. The light is distributed on the basis of the detection of oncoming traffic or road users in front with switched on/detectable lighting.

The front camera for driver assist systems R242 is used for detection.

The following examples show the behaviour of the headlight control system on left-hand drive vehicles that are travelling straight ahead. The behaviour is adapted accordingly on right-hand drive vehicles and in corners.

1. Illumination without detected object

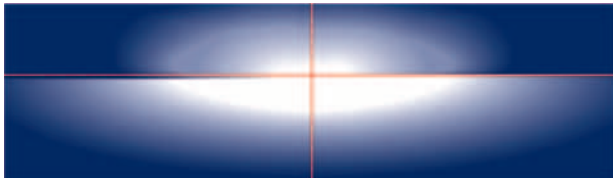
Neither oncoming vehicles, vehicles ahead nor illuminated objects are detected.

The illumination is in normal main beam operation from a speed of 60 km/h. The main beam is switched off again below 30 km/h.



s553_058

Light pattern



s553_082

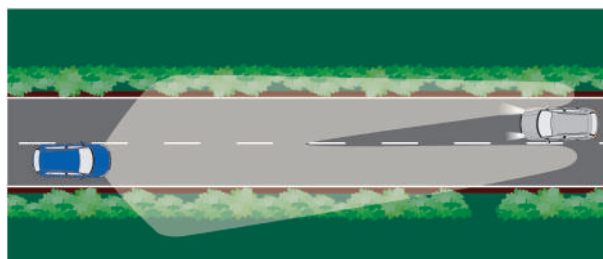
Activated light



s553_084

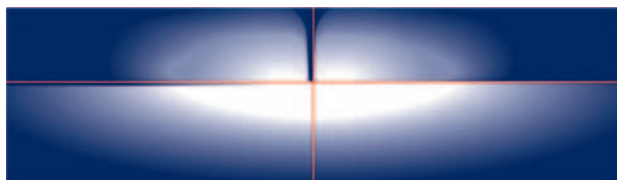
2. Illumination with detected object on the other side of the road at a great distance

An oncoming vehicle is detected. The additional main beam is switched off and the two swivelling LED units are turned to the left.



s553_060

Light pattern



s553_086

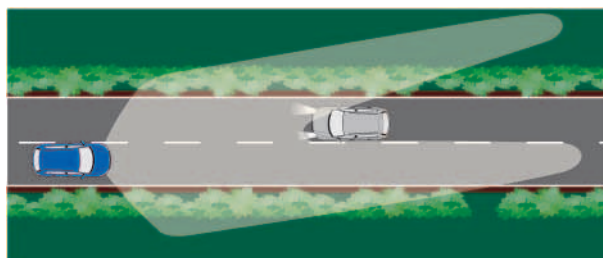
Activated light



s553_088

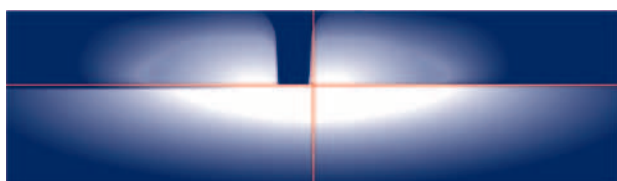
3. Illumination with detected object on the other side of the road at a medium distance

The oncoming vehicle approaches.
The left-hand LED unit is turned further to the left.
This increases the size of the area to be dimmed so that the driver of the oncoming vehicle is not dazzled.



s553_062

Light pattern



s553_090

Activated light

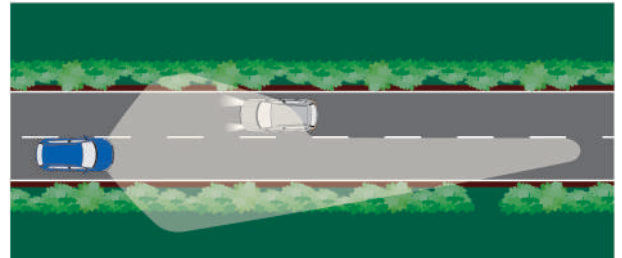


s553_092

Lights

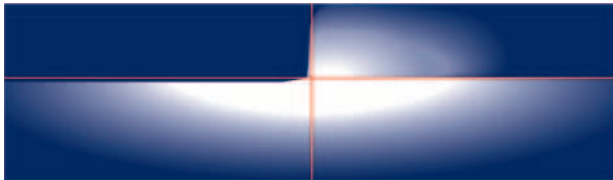
4. Illumination with object detected nearby on the other side of the road

Once the limit of the LED module movement range has been reached, the main beam on the driver side is switched to dipped beam. This prevents the driver of the oncoming vehicle being dazzled.



s553_064

Light pattern



s553_094

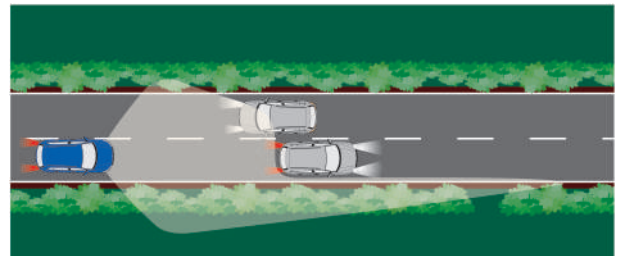
Activated light



s553_096

5. Illumination when objects are detected on both lanes

If there is a risk of the main beam dazzling a vehicle in front, the headlight on the front passenger side will also be switched to dipped beam.



s553_066

Light pattern



s553_098

Activated light



s553_100

Auxiliary light module



s553_135

Front fog light/static cornering light
(H8, 35 W)

The front fog lights are fitted in the bumper. In combination with the “Basic” halogen or LED headlights, the fog lights are also used as the static cornering light.

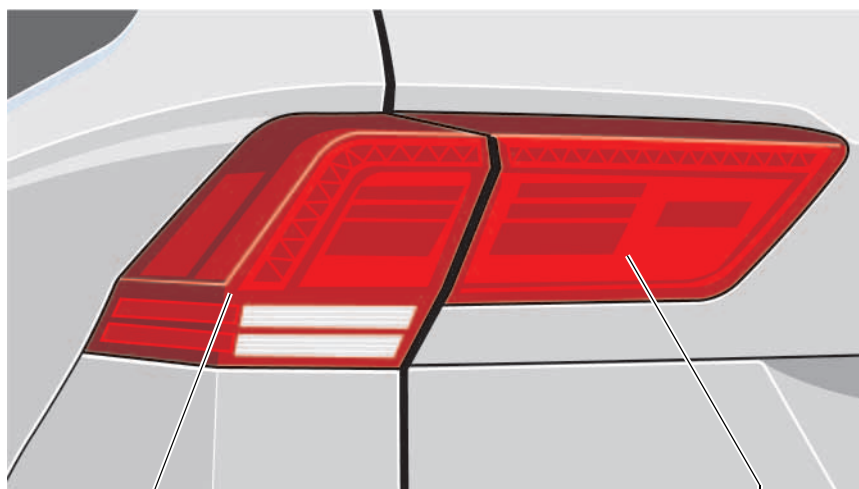
Tail light clusters

Two variants are available:

- “Basic” tail light cluster
- “High” tail light cluster

The tail light clusters predominantly feature LED technology. One exception is the turn signal on the “Basic” version. A bulb is used in this case.

Both types of tail light cluster are split into a fixed section and a section on the rear lid.



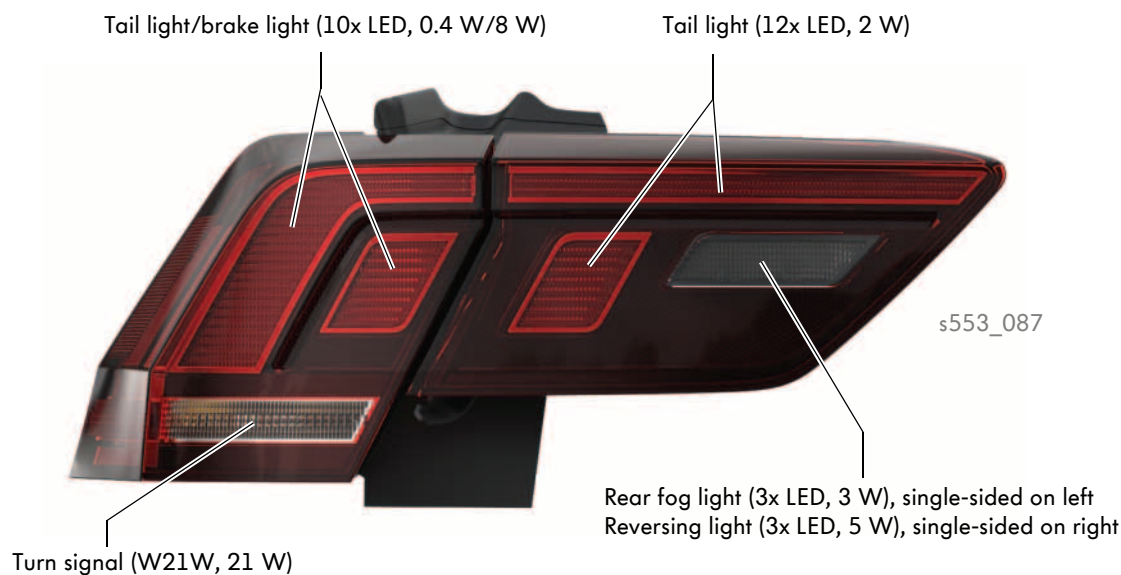
s553_113

Fixed section

Rear lid section

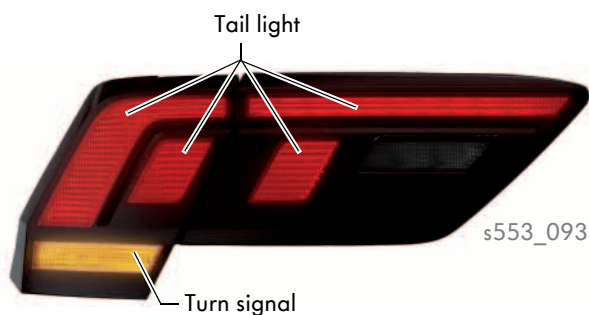
Lights

“Basic” tail light cluster

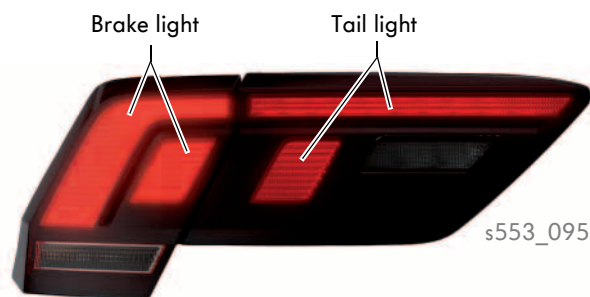


“Basic” version light functions

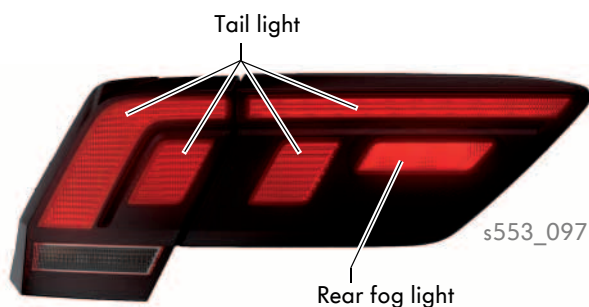
Light pattern: tail light with turn signal



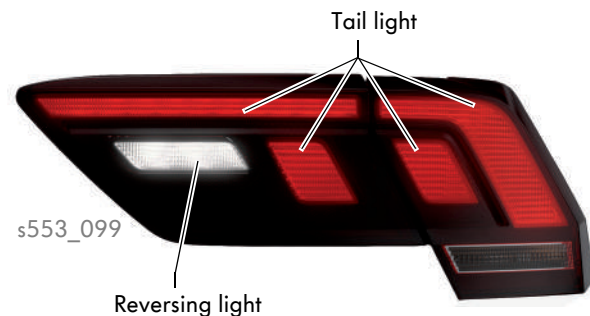
Light pattern: tail light with brake light



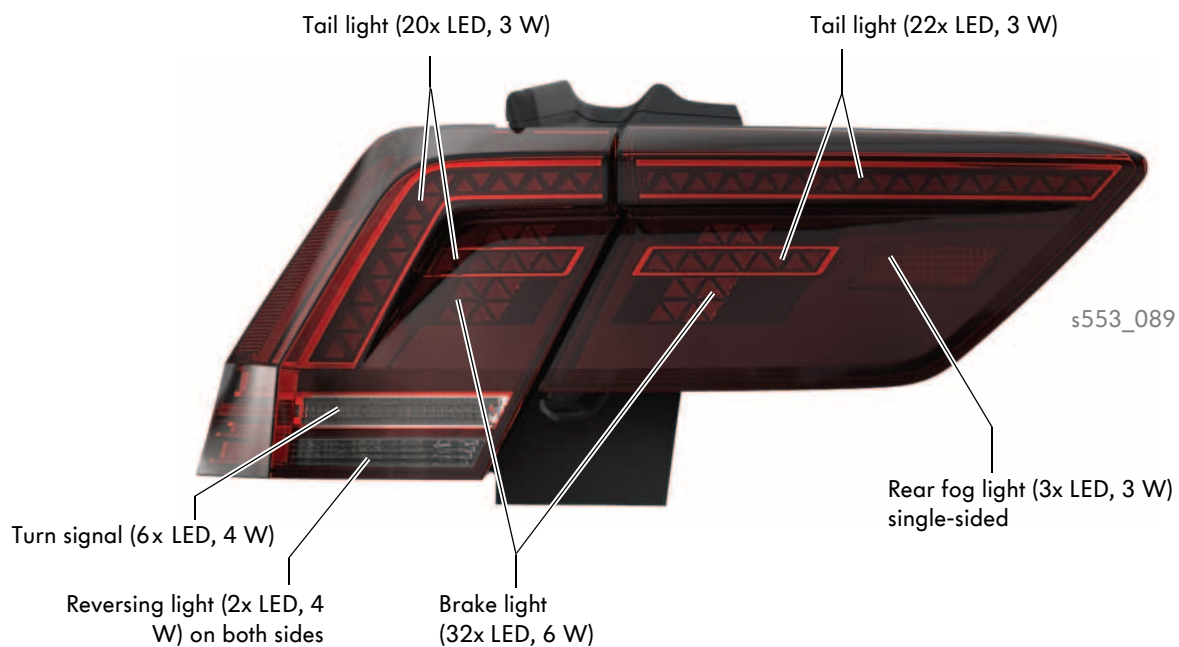
Light pattern: tail light with rear fog light



Light pattern: tail light with reversing light

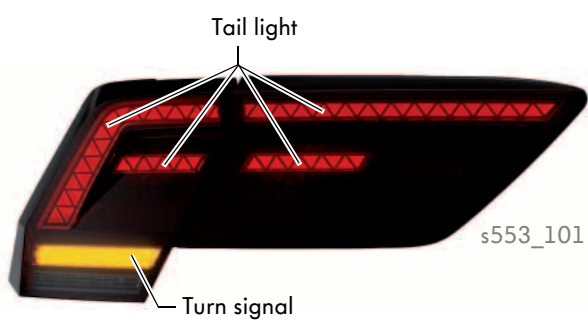


“High” tail light cluster

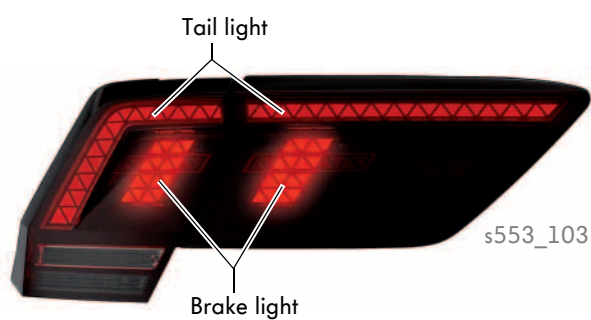


“High” version light functions

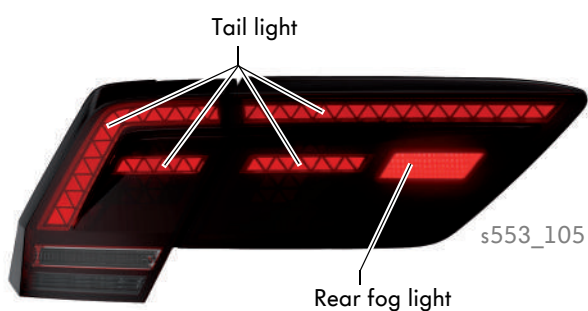
Light pattern: tail light with turn signal



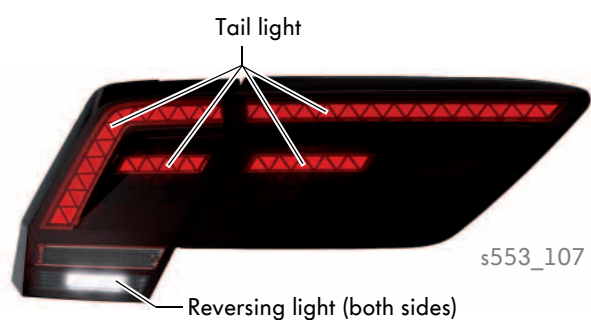
Light pattern: tail light with brake light



Light pattern: tail light with rear fog light



Light pattern: tail light with reversing light



Modular infotainment matrix (MIB)

The second generation of the modular infotainment matrix (MIB) is used.



Function overview	Composition Touch	Composition Colour	Composition Media
Design/display	5" B&W	5" colour	8" colour
Touchscreen	●	●	●
Radio AM/FM	●	●	●
RDS	●	●	●
Station logos	–	–	●
Phase diversity	–	●	●
CD drive	–	●	●
DVD drive	–	–	–
HDD/SSD	–	–	–
MP3-compatible	●	●	●
SD card slot	●	●	●
AUX-IN socket	●	●	●
USB in storage compartment	○	○	●
USB in rear	–	–	○
Tone adjustment	Three-way	Three-way	Five-way
Output control	2 × 20 watts	4 × 20 watts	4 × 20 watts
Voice control	–	–	○
"Basic" mobile telephone interface	○	○	●
Front loudspeakers	●	–	–
Front/rear loudspeakers	–	●	●
2D/3D map display	–	–	–
Compatible with reversing camera	–	–	○
"Comfort" mobile telephone interface	–	○	○
"Business" mobile telephone interface	–	–	–
Sound system	–	–	○
DAB+	○	○	○



You will find further information on the modular infotainment matrix in Self-study Programme no. 546 “The Passat 2015 – Infotainment and Car-Net”.



Function overview	Discover Media	Discover Pro
Design/display	8" colour	8" colour
Touchscreen	●	●
Radio AM/FM	●	●
RDS	●	●
Station logos	●	●
Phase diversity	●	●
CD drive	●	–
DVD drive	–	●
HDD/SSD	–	64 GB SSD
MP3-compatible	●	●
SD card slot	●	●
AUX-IN socket	●	●
USB in storage compartment	●	●
USB in rear	○	○
Tone adjustment	Five-way	Five-way
Output control	4 × 20 watts	4 × 20 watts
Voice control	○	●
“Basic” mobile telephone interface	●	●
Front loudspeakers	–	–
Front/rear loudspeakers	●	●
2D/3D map display	●	●
Compatible with reversing camera	○	○
“Comfort” mobile telephone interface	○	○
“Business” mobile telephone interface	–	○
Sound system	○	○
DAB+	○	○

● Standard

○ Optional

– Not available

Media interface

The Tiguan can be equipped with various media interfaces:

- AUX-IN socket on unit front and USB connection in the storage compartment (Composition Touch/Colour)
- USB and AUX-IN socket in the storage compartment in front of the selector lever
- USB socket in the rear

The USB connection can be ordered with Apple compatibility.

You then do not require a special adapter cable as the Apple authentication chip is integrated into the USB connection. The original telephone adapter cable can be used to connect devices.

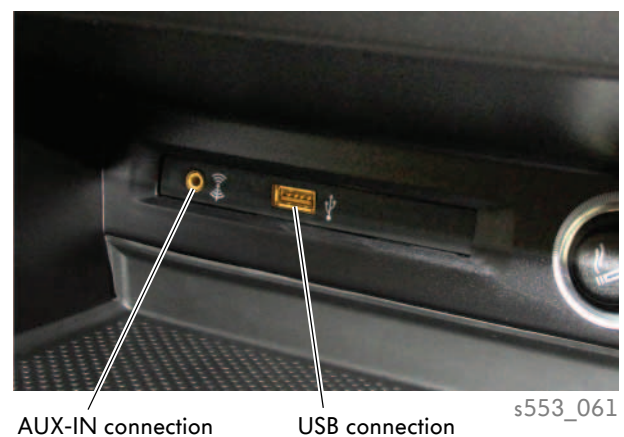
AUX-IN socket on unit front and USB connection in storage compartment

The AUX-IN socket has been integrated into the front of the unit on the Composition Touch and Composition Colour radios. The USB socket is in the storage compartment.



USB and AUX-IN sockets in the storage compartment

If the vehicle is equipped with the control unit 1 for information electronics J794, i.e. from Composition Media and above, the USB and AUX-IN sockets can be found in the storage compartment in front of the gear selector lever.



USB socket in the rear



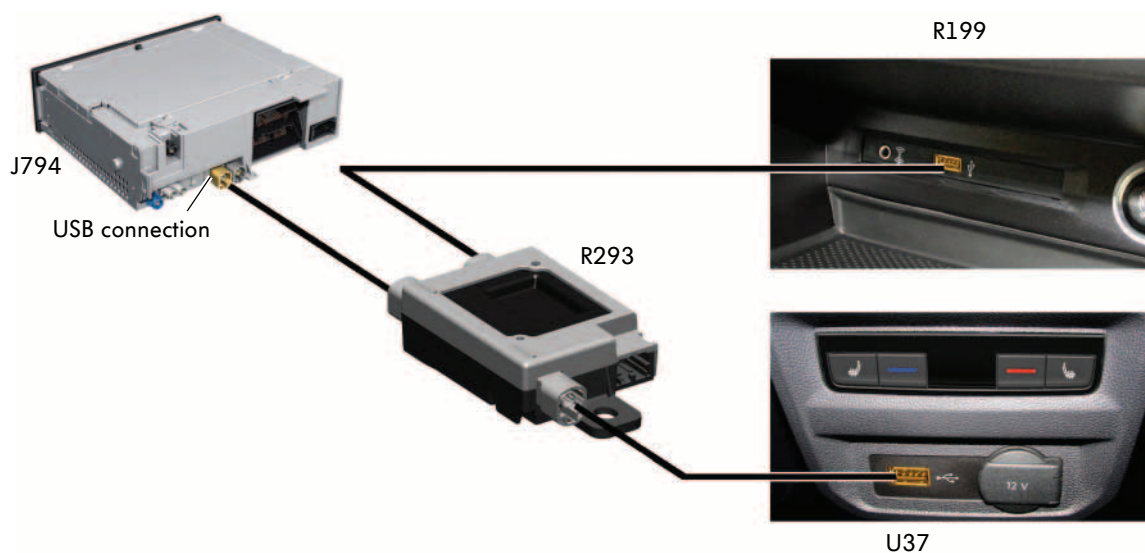
USB connection

s553_065

If the vehicle is equipped with the “Comfort” mobile phone preparation and/or the Volkswagen Media Control preparation, there will be a USB connection at the rear in addition to the USB and AUX-IN socket in the storage compartment at the front.

The USB hub R293 is provided so that two USB connections can be used at the same time.

It is located in the centre console near the gear selector lever and enables two USB sockets to be connected to the USB connection on the control unit 1 for information electronics J794.



s553_106

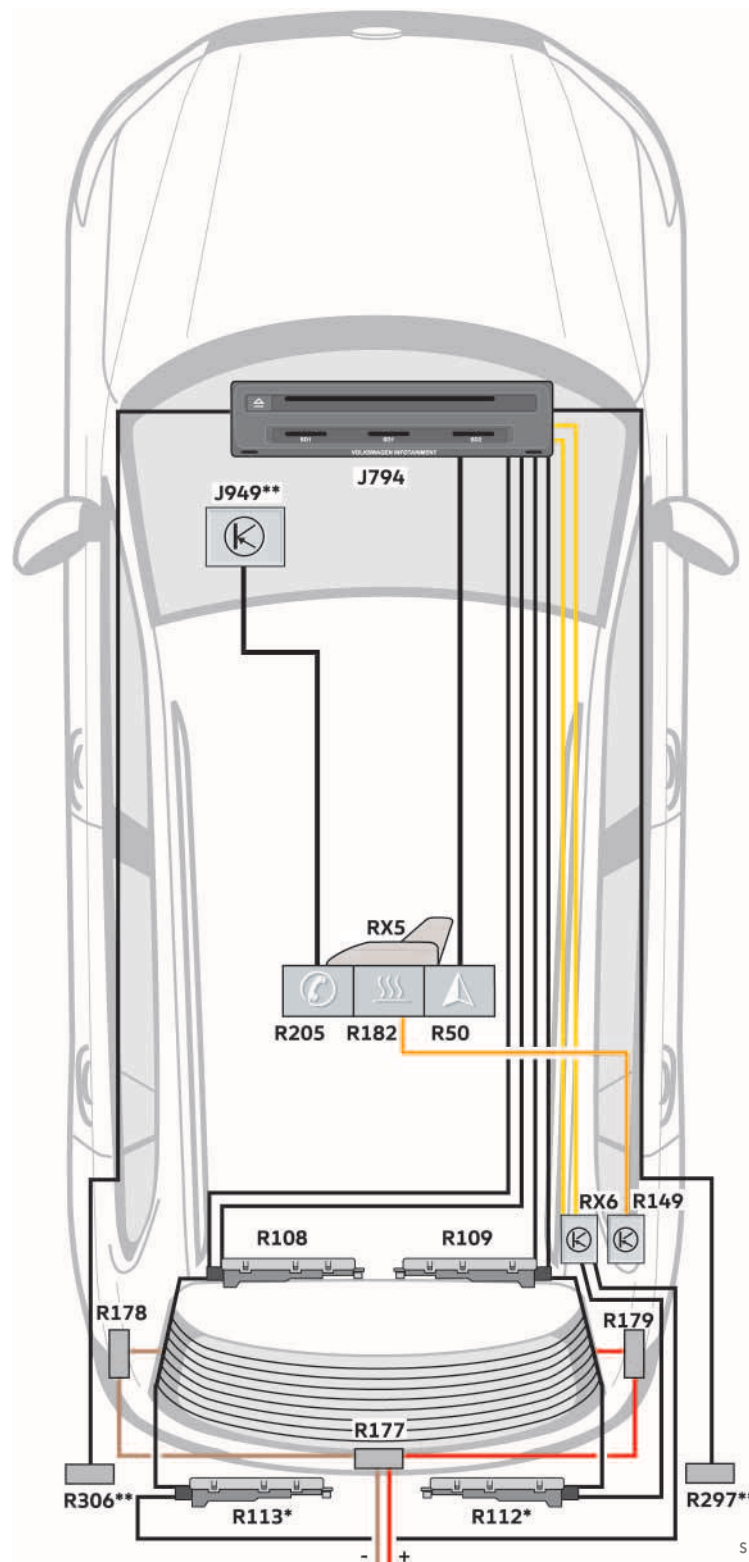
Key

J794 Control unit 1 for information electronics
R199 Connection for external audio sources

R293 USB hub
U37 USB charging socket 1 (data-enabled)

Aerial systems

In addition to the roof aerial, which is available in various versions, the Tiguan has several aeral in the rear window. The following graphic shows the aerial components of a fully-equipped vehicle.



s553_104

Key

J794	Control unit 1 for information electronics
J949**	Emergency call module control unit and communication unit
R50	GPS aerial
R108	Left aerial module (for FM2/DAB)
R109	Right aerial module (for AM/FM1)
R112*	Aerial amplifier 3 (with impedance converter TV2)
R113*	Aerial amplifier 4 (with impedance converter TV3)
R149	Remote control receiver for auxiliary coolant heater (installed on right-hand side of luggage compartment)
R177	Amplitude modulation (AM) frequency filter
R178	Frequency modulation (FM) frequency filter in negative wire
R179	Frequency modulation (FM) frequency filter in positive wire
R182	Auxiliary heater aerial
R205	GSM aerial
R297**	LTE aerial 1 (behind bumper cover, on right)
R306**	LTE aerial 2 (behind bumper cover, on left)
RX5	Roof aerial
RX6	TV tuner (installed on right-hand side of luggage compartment)

* Aerial amplifiers 3 and 4 are only available for the Japanese market.

** To be introduced at a later date.

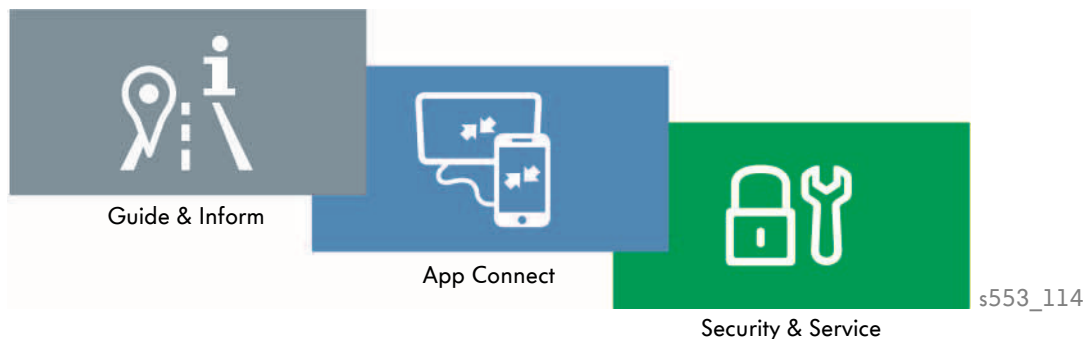
Mobile online services

The new “Security & Service” service group is being used for the first time. Users can therefore now make emergency calls from the vehicle.

From 2018, new cars in the EU will need to have an automatic emergency call function. By introducing these services, Volkswagen is acting ahead of the legal requirements.

The following functions are available in the Tiguan:

- Guide & Inform
- App Connect
- Security & Service



Requirements

Car-Net Guide & Inform is only available in the Discover Media and Discover Pro navigation systems. The user needs to select Guide & Inform directly during vehicle configuration. Retrofitting is not possible.

Car-Net App Connect is available in the Composition Media, Discover Media and Discover Pro. It is possible to retrofit the Car-Net App Connect function.

In order to use **Car-Net Security & Service**, the emergency call module control unit and communication unit J949, the three-button module and an emergency call loudspeaker need to be installed. Car-Net Security & Service cannot be retrofitted.



The apps and online functions vary from country to country and according to the equipment level. Not all services will be available when the Tiguan is launched. Please refer to the information page at www.volkswagen-carnet.com to find out which Car-Net functions will be available in your market.

Overview

The following table shows the respective available Car-Net services in the Tiguan for the “Security & Service”, “Guide & Inform” and “App Connect” functions.

 Guide & Inform	 App Connect	 Security & Service
Online map update*	Apple Car Play	Automatic emergency call
Tour import	Google Android Auto	Manual emergency call
Charging stations	MirrorLink	Automatic accident notification
Fuel info		Service scheduling
Parking info		Breakdown call
Online POI search (voice)*		Vehicle health report
Destination Import		Driving data
Weather		Vehicle status
News		Doors and lights
Personal POI		Lock and unlock
Vehicle health report		Horn and turn signals
Google Street View*		Area alert
Google Earth*		Speed alert
Online POI search (text)		Parking
Online traffic information		Online auxiliary heater
		Online anti-theft alarm

* Only available in Discover Pro

Guide & Inform

The Guide & Inform Car-Net function has two new services in the Tiguan:

Services	Description
 Online map update	Users can now update the maps in their navigation system online. This service is only available for the Discover Pro.
 Tour import	Users can create tours online with up to five stopovers and send them to the vehicle. The tour will be automatically loaded into the vehicle destination memory once the vehicle is connected to the Internet.

Security & Service

The following components are installed in the Tiguan for the “Security & Service” function:

Design

The three-button module is installed in the roof console. The buttons are used to make information, breakdown and emergency calls. The buttons need to be pressed and held briefly in order to set up the connection.

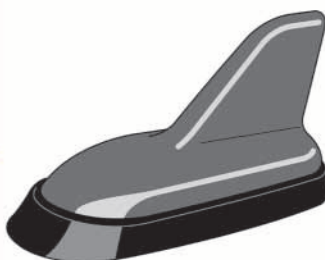


The infotainment system loudspeakers are used for the emergency call and breakdown call. If the infotainment system fails (e.g. after an accident), the additional loudspeaker for telematics will be used. This speaker is directly connected to J949.





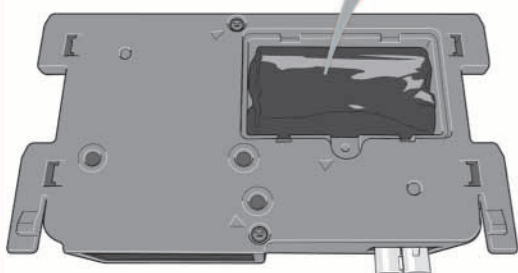
The hands-free system microphone will be used for communication.
The microphone is connected directly to the emergency call module control unit and communication unit J949.



The emergency call module control unit and communication unit J949 uses the roof aerial RX5.



The battery allows J949 to make an emergency call even when the power supply to the control unit is interrupted.



The emergency call module control unit and communication unit J949 is located below the dash panel on the fuse carrier. This now has an emergency battery.

s553_145

Services

The services from the “Security & Service” Car-Net function allow drivers to optimise their personal safety. Furthermore they can access important information about their vehicle with this function.

Services	Description
 Automatic emergency call	An automatic emergency call is triggered when the airbag control unit J234 recognises a collision and a restraint system (belt tensioner or airbag) is triggered. The airbag control unit transmits a signal to the emergency call module control unit and communication unit J949. This automatically triggers an emergency call. Depending on the market, this emergency call is made to a specialist call centre or straight to the emergency services. The data relevant to the emergency call are transferred with the automatic emergency call.
 Manual emergency call	The emergency call can also be made manually. You just need to press and hold the emergency call button in the roof console. The emergency call goes to an emergency call centre or the emergency services depending on the market.
 Automatic accident notification	In a minor accident without airbag deployment, the user will see a pop-up window on the infotainment system display. It is now possible to contact the Volkswagen road-side assistance call centre directly. If you wish, a voice connection will be set up for this and vehicle and position data transferred to the call centre.
 Service scheduling	In order to use this service, users need to save their Volkswagen authorised workshop on the customer portal. When the next service is due, the vehicle will automatically transmit the vehicle data to the saved authorised workshop. The workshop can then contact the customer and prepare the appointment accordingly.
 Breakdown call	If the vehicle has a fault, the user can set up a voice connection to the Volkswagen road-side assistance by pressing a button. At the same time, vehicle and position data are transferred. The user can then be helped quicker.
 Vehicle health report	Users can find out about the condition of their vehicle online with this service. On the customer portal, the customer is provided with an overview of any illuminated indicator or warning lamps, the mileage and the time until the next service. The vehicle health report can only be accessed via the customer portal.
 Driving data	Users can check the driving data for their vehicles on the customer portal or in the Car-Net smartphone app. This includes: - Fuel consumption - Distance covered - Driving time

Services	Description
	Vehicle status Users can access vehicle data via the Car-Net smartphone app. The following is displayed: - Mileage - Service information - Remaining range - Fuel level
	Doors and lights This function allows users to check whether doors and windows are closed, whether the vehicle is locked and whether the exterior lights are still switched on.
	Lock and unlock This service allows users to lock and unlock the vehicle remotely with the smartphone app.
	Horn and turn signals The user can activate the horn and turn signals via the smartphone app.
	Area alert Users can define up to ten different areas that the vehicle may not leave or enter on a map provided on the customer portal and in the app. If the vehicle then leaves or enters one of the defined areas, the user will be notified.
	Speed alert This service allows users to define speed limits for the vehicle. If the vehicle exceeds the set speed, the user will be notified.
	Parking position Users can display the last parking position of their vehicle on the customer portal and in the smartphone app. When you switch off the ignition, the parking position is transmitted to the Volkswagen server and accessed there.
	Online auxiliary heater Activate, deactivate or program the vehicle auxiliary heater via the smartphone app or customer portal.
	Online anti-theft alarm If the anti-theft alarm detects that the vehicle has been broken into, the user will automatically receive an email and a message on their smartphone.

Glossary

AFS

(Advanced Frontlighting System)

This function improves illumination of the road considerably when the vehicle is cornering as the headlight beam pattern is directed according to the position of the steering wheel.

AGM

(Absorbent Glass Mat)

Abbreviation for a type of battery in which the electrolyte is held in micro-glass fibre mats.

AM

Amplitude modulation, electromagnetic wave used to transmit messages.

In amplitude modulation, the amplitude of the high frequency is varied.

App

Software application for mobile operating systems.

AUX-IN

Signal input for external audio devices.

Bluetooth

Bluetooth is an industry standard developed by the Bluetooth Special Interest Group (SIG) for wireless communications between devices over short distances.

CAN

(Controller Area Network)

Standardised digital twin-wire data network used in vehicle electronics.

CVBS

(Colour video blanking synchronisation signal)

A signal standard for transmitting colour video images.

DAB

(Digital Audio Broadcasting)

Radio channel broadcast digitally by radio stations. DAB+ is a further development of digital radio, which was introduced in 2011 in Germany.

DVD

Digital Versatile/Video Disc

A further development of optical storage media with a memory capacity of 4.7 GB, on one-sided, single-layer DVDs (single-layer DVD, DVD±R, DVD±RW), and 8.5 GB, on one-sided, double-layer DVDs (dual-/double-layer, DVD±R-DL, DVD-RW±DL).

EFB

(Enhanced Flooded Battery)

Abbreviation for the improved form of a wet battery.

FAZIT

(Fahrzeug Auskunft und zentrales Identifikations-Tool = vehicle information and central identification tool)
This central database at Volkswagen contains all theft-relevant control unit data integrated into the “immobiliser” function.

FM

Frequency modulation, electromagnetic wave used to transmit messages.

In frequency modulation, the frequency of the carrier wave varies in step with the information signal. The amplitude remains constant.

HDD

(Hard Disk Drive)

Also known as an internal hard drive, a magnetic storage medium in which data are written on the surface of rotating disks.

HFP

(Hands-free profile)

Bluetooth standard for hands-free system.

LED

(Light Emitting Diode)

Energy-saving lamp system in which one or more light-emitting diodes are connected to form a source of light.

LIN

(Local Interconnect Network)

Serial single-wire data network, which is used to connect electronic components to higher-level control units.

LVDS

(Low voltage differential signalling)

Standard interface for high speed data transmission.

MIB

(Modular infotainment matrix)

Designation for a modular system used by many brands and models for the vehicle's infotainment components.

MOST

(Media Oriented Systems Transport)

This is a serial bus system for transmitting audio, video, speech and data signals. Volkswagen currently uses fibre optic cable for this bus system.

MP3

Abbreviation for MPEG Layer3 (Motion Picture Experts Group Layer 3); compression standard for audio data formats.

MQB

(Modular transverse matrix)

Designation for a modular system used by many brands and models in vehicle development and production.

RDS

(Radio Data System)

A standardised system for transmitting additional radio data information such as the name of a broadcaster, audio title etc.

rSAP

(remote SIM Access Profile)

Profile that enables the SIM card to be read and its access data to be used by the universal mobile telephone preparation (UHV).

Server

A computer that provides data for other computers (called clients) to access via a network.

SD card

(Secure Digital card)

Small and robust memory cards, e.g. for digital cameras.

SIM

(Subscriber Identity Module)

A chip card that is inserted into a mobile telephone and identifies the user on the network.

SSD

(Solid State Drive)

Storage medium without mechanically moving parts.

Subwoofer

(Bass loudspeaker)

Subwoofers are special speakers for outputting very low frequency bass sounds. A distinction is made between active and passive subwoofers. Active subwoofers have their own power amplifiers; passive subwoofers do not have their own power amplifiers and are connected to an amplifier output like a normal loudspeaker.



© VOLKSWAGEN AG, Wolfsburg
All rights reserved. Subject to technical modifications.
000.2813.10.20 Technical status 03/2016

Volkswagen AG
After Sales Qualification
Service Training VSQ-2
Brieffach 1995
D-38436 Wolfsburg

♻️ This paper was manufactured from pulp that was bleached without the use of chlorine.